

We claim:

1. A method for use by a subscriber unit to select a time to receive a transmission from a wireless local area network access point using a shared wireless communication resource, comprising:
  - receiving a beacon transmission from the access point comprising first information that corresponds to times when other subscriber units are proposing to utilize the shared wireless communication resource;
  - using the first information to select a particular time to receive data from the access point using the shared wireless communication resource.
2. The method of claim 1 wherein receiving a beacon transmission comprises receiving the beacon transmission at a scheduled time.
3. The method of claim 2 wherein receiving the beacon transmission at a scheduled time further comprises altering a subscriber unit operating mode from a sleep mode of operation to an active reception mode of operation.
4. The method of claim 1 wherein using the first information to select a particular time to receive data comprises scheduling a subscriber unit sleep mode of operation to permit reception of data at the selected particular time.
5. The method of claim 1 wherein the shared wireless communication resource comprises an 802.11 compliant shared wireless communication resource.
6. The method of claim 1 and further comprising:
  - transmitting the selected particular time;
  - determining that the selected particular time was not received by the access point;
  - selecting a new time to permit reception of data from the access point using the shared wireless communication resource.

7. The method of claim 6 wherein selecting a new time to permit reception of data from the access point using the shared wireless communication resource comprises:
  - receiving another beacon transmission from the access point comprising second information that corresponds to times when other subscriber units are proposing to utilize the shared wireless communication resource;
  - using the second information to select a new particular time to receive data from the access point using the shared wireless communication resource.
8. A method for use by a wireless local area network access point to facilitate reception of transmissions from the access point by subscriber units using a shared wireless communication resource, comprising:
  - receiving transmissions from a plurality of subscriber units, wherein the transmissions include information that identifies proposed times when each of the plurality of subscriber units proposes to utilize the shared wireless communication resource;
  - including schedule information that corresponds to at least a part of the information in a beacon transmission to the subscriber units, such that at least one of the subscriber units can utilize the schedule information to schedule a sleep mode of operation that is consistent with data reception at a selected particular time.
9. The method of claim 8 wherein receiving transmissions from a plurality of subscriber units comprises receiving the transmissions during a contention portion of a beacon interval.
10. The method of claim 8 wherein including schedule information that corresponds to at least a part of the information in a beacon transmission to the subscriber units comprises identifying specific times when each of the plurality of subscriber units has proposed to make a transmission.
11. The method of claim 10 wherein identifying specific times comprises identifying a particular moment in a real-time sequence.
12. The method of claim 10 wherein identifying specific times comprises identifying a value that corresponds to a time slot.

13. The method of claim 12 wherein identifying a value that corresponds to a time slot comprises identifying a value that corresponds to a time slot as measured with respect to a particular known event.
14. The method of claim 13 wherein identifying a value that corresponds to a time slot from a particular known event comprises identifying a value that corresponds to a time slot as measured with respect to the beacon transmission.
15. The method of claim 12 wherein including scheduling information that corresponds to at least a part of the information in a beacon transmission comprises identifying specific times when none of the plurality of subscriber units has proposed to make a transmission.
16. A method for permitting subscriber units using a shared wireless communication resource to utilize a wireless local area network access point, comprising:
  - at various of the subscriber units:
    - transmitting to the access point information that corresponds to proposed transmission times for at least some of the various of the subscriber units;
  - at the access point:
    - using the information to form a message;
    - transmitting the message in a beacon transmission to the subscriber units;
  - at at least one of the subscriber units:
    - receiving the beacon transmission;
    - using the message to select a first particular time at which to shift from a sleep mode of operation to an active mode of operation.
17. The method of claim 16 wherein using the message to select a first particular time at which to shift from a sleep mode of operation to an active mode of operation comprises a subscriber unit that did not propose a transmission time to the access point using the message to select a first particular time at which to shift from a sleep mode of operation to an active mode of operation.

18. The method of claim 16 wherein using the message to select a first particular time at which to shift from a sleep mode of operation to an active mode of operation comprises a subscriber unit that did propose a transmission time to the access point using the message to select a first particular time that is different from any of the proposed transmission times.
19. The method of claim 16 wherein transmitting to the access point information that corresponds to proposed transmission times comprises transmitting to the access point during a beacon interval.
20. The method of claim 16 wherein the shared wireless communication resource comprises an 802.11 compliant shared wireless communication resource.
21. The method of claim 16 wherein using the information to form a message comprises including all of the proposed access times from each of the various of the subscriber units in the message.
22. A subscriber unit for use with a wireless local area network access point using a shared wireless communication resource, comprising:
  - a shared wireless communication resource compatible transceiver;
  - a controller having at least an active mode of operation and a sleep mode of operation and being operably coupled to the transceiver;
  - a memory operably coupled to the controller having, at least from time to time, stored therein:
    - a plurality of proposed times at which other subscriber units have proposed to utilize the shared wireless communication resource;
    - a first scheduled time at which the controller will shift from the sleep mode of operation to the active mode of operation;
    - a second scheduled time at which the controller will cause the transceiver to receive data as transmitted by the access point.
23. The subscriber unit of claim 22 wherein the controller comprises scheduling means for using the plurality of proposed times to select the first and second scheduled times.

24. The subscriber unit of claim 23 wherein the scheduling means is further for causing transmission of the data to the access point at the second scheduled time when there is no proposed time.
25. The subscriber unit of claim 24 wherein the scheduling means is further selecting another scheduled time when an apparent conflict appears to exist with another subscriber unit at the second scheduled time.